

Application/Control Number: 10/786,182

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IN THE CLAIMS:

1. (Currently amended) A method for performing a wire-bonding operation in an integrated circuit, utilizing a bonding tool, the method comprising the steps of:

ball bonding a wire to a first bond site in the integrated circuit;

forming at least one bend in the wire; and

terminating the wire at a second bond site, thereby creating a bonded wire bond having a profile;

wherein the ball bonding, forming and terminating steps are repeated for ~~a plurality of at least one~~ additional wire bonds ~~of in~~ the integrated circuit, and the profiles of at least two wire-bond ~~profiles bonded wires~~ in the integrated circuit are substantially perpendicular to one another at a crossing point ~~of the profiles thereof~~.

2. (Original) The method of claim 1, wherein the step of forming at least one bend in the wire comprises the step of applying at least one reverse motion with the bonding tool.

3. (Original) The method of claim 2, wherein the step of applying at least one reverse motion comprises the step of applying a negative reverse motion and a positive reverse motion, wherein the negative reverse motion comprises moving the bonding tool vertically above the ball bond and in a first horizontal direction toward the second bond site, and wherein the positive reverse motion comprises moving the bonding tool vertically above the ball bond and in a second horizontal direction away from the second bond site.

4. (Original) The method of claim 3, wherein the negative reverse motion is applied at approximately 0.2 mm from the first bond site along a length of the wire.

5. (Original) The method of claim 3, wherein the positive reverse motion is applied at approximately 0.6 mm from the first bond site along a length of the wire.

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6. (Currently amended) The method of claim 5, wherein the wire bond profile of the bonded wire has a height of approximately 0.6 mm.

7. (Original) The method of claim 3, wherein the negative reverse motion is applied at approximately 1.1 mm from the first bond site along the length of the wire.

8. (Original) The method of claim 1, further comprising the steps of:
clamping the wire with the bonding tool at a desired length after forming at least one bend in the wire; and
moving the bonding tool along an arcuate path to the second bond site before terminating the wire at the second bond site.

9. (Original) The method of claim 1, wherein the step of terminating the wire at the second bond site comprises the steps of:
bonding a ball to the second bond site with the bonding tool; and
terminating the wire on a top surface of the bonded ball at the second bond site with the bonding tool.

10. (Original) The method of claim 9, wherein the wire is terminated at a die or a capacitor of the integrated circuit.

11. (Original) The method of claim 1, wherein the at least one bend prevents the wire bond profile from skewing in a direction away from the second bond site.

12. (Original) The method of claim 1, wherein the integrated circuit comprises a radio-frequency integrated circuit

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13. (Original) The method of claim 1, wherein the first bond site is disposed on a capacitor and the second bond site is disposed on a die.

14. (Original) The method of claim 13, wherein the step of terminating the wire comprises terminating the wire at an angle substantially less than 90 degrees, thereby decreasing cross coupling of the wire with other wires of the integrated circuit.

15. (Original) The method of claim 1, wherein the first bond site is disposed on a die and the second bond site is disposed on a capacitor.

16. (Original) The method of claim 1, wherein the first bond site is disposed on a die and the second bond site is disposed on a lead of an integrated circuit package.

17. (Original) The method of claim 16, wherein the step of terminating the wire at a second bond site comprises the step of terminating the wire with a wedge bond.

18. (Currently amended) An integrated circuit comprising:
an integrated circuit package;
a plurality of circuit elements disposed within the integrated circuit package;
a plurality of wire-bonds bonded wires, wherein each of at least a subset of the wire-bonds bonded wires is ball bonded at a first bond site and terminated at a second bond site to create a corresponding wire-bond profile, and wherein the profiles of at least two of the wire-bond profiles bonded wires are substantially perpendicular to one another at a crossing point of the profiles thereof.

19. (Currently amended) The integrated circuit of claim 18, wherein the plurality of wire bonds bonded wires comprise a first wire-bond set of bonded wires and a second wire-bond set of bonded wires, wherein wire-bond profiles of the first wire-bond set of bonded wires are interspersed with wire-bond profiles of the second wire-bond set of bonded wires, and wherein the wire-bond

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profiles of the first ~~wire-bond set~~ of bonded wires are substantially perpendicular to the ~~wire-bond~~ profiles of the second ~~wire-bond set~~ of bonded wires at crossing points ~~of the wire-bond profiles~~ thereof.

20. (Currently amended) The integrated circuit of claim 19, wherein the plurality of wire bonds bonded wires further comprises a third ~~wire-bond set~~ of bonded wires and a fourth ~~wire-bond set~~ of bonded wires.

21. (Original) The integrated circuit of claim 18, wherein the first bond site is disposed on one of the plurality of circuit elements and the second bond site is disposed on another of the plurality of circuit elements.